

**Amendments to the Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims**

1. (Currently Amended) A method for treating living tissue with electromagnetic fields, comprising:
  - providing living tissue to be treated;[[,]]
  - providing at least one signal generator for generating a plurality of signals;
  - providing a selection mechanism for selecting at least one output signal from the plurality of generated signals;
  - providing the at least one output signal to a power amplifier, wherein the power amplifier adaptively controls magnetic flux density (B) by generating a controllable current;
  - providing means for applying ~~electromagnetic fields~~ magnetic flux density (B) to the tissue [[,]]; and
  - subjecting said tissue to a ~~varying~~ controllable magnetic flux density (B) and dB/dt.
2. (New) The method of claim 1, wherein dB/dt is controllable by controlling magnetic flux density (B), while keeping time (t) constant.
3. (New) The method of claim 2, wherein magnetic flux density (B) is controllable by controlling at least one of the amplitude and timing parameters of the current delivered to a coil for applying the magnetic flux density to the tissue.
4. (New) The method of claim 1, wherein dB/dt is controllable by controlling time (t), while keeping magnetic flux density (B) constant.
5. (New) The method of claim 1, wherein dB/dt is controllable by controlling both magnetic flux density (B) and time (t).

6. (New) The method of claim 1, wherein said tissue is nerve tissue, the method further comprises providing a sawtooth magnetic flux density (B) and applying the sawtooth magnetic flux density (B) to the nerve tissue.

7. (New) The method of claim 6, wherein the sawtooth magnetic flux density (B) has symmetrical rise and fall times.

8. (New) The method of claim 6, wherein the sawtooth magnetic flux density (B) has asymmetrical rise and fall times.

9. (New) The method of claim 1, wherein dB/dt is controllable by controlling a current input to the means for applying magnetic flux density to the tissue.

10. (New) The method of claim 9, wherein the current is provided by the output of a current output amplifier.

11. (New) A method for determining a beneficial or harmful treatment of living tissues with electromagnetic fields, comprising:

providing living tissue to be treated;

providing at least one signal generator for generating a plurality of signals;

providing a selection mechanism for selecting at least one output signal from the plurality of generated signals;

providing the at least one output signal to a power amplifier, wherein the power amplifier adaptively controls magnetic flux density (B) by generating a controllable current;

providing means for applying magnetic flux density (B) to the tissue;

subjecting said tissue to a controllable magnetic flux density (B) and dB/dt; and  
determining the effect on the tissue.

12. (New) The method of claim 11, wherein magnetic flux density (B) is controlled by controlling a current input to the means for applying magnetic flux density (B) to the tissue.

13. (New) The method of claim 12, wherein the current is provided by the output of a current output amplifier.

14. (New) An apparatus for treating living tissues with electromagnetic fields, the apparatus comprising:

at least one signal generator for generating a plurality of signals;

a selection mechanism for selecting at least one output signal from the plurality of generated signals;

a power amplifier that uses the at least one output signal and adaptively controls magnetic flux density (B) by generating a controllable current; and

means for applying magnetic flux density (B) to the tissue.

15. (New) The apparatus of claim 14, wherein the tissue is subjected to a controllable magnetic flux density (B) and  $dB/dt$ .

16. (New) The apparatus of claim 14, wherein the tissue is subjected to a controllable magnetic flux density (B) and  $dB/dt$ , the apparatus further comprises means for determining the effect on the tissue.

17. (New) The apparatus of claim 14, wherein the means for applying magnetic flux density (B) includes a coil.

18. (New) The apparatus of claim 14, wherein the power amplifier is a current output amplifier.

19. (New) The apparatus of claim 14, for promoting nerve regeneration, wherein one of the plurality of signals is a sawtooth.

20. (New) The apparatus of claim 19, wherein the sawtooth has symmetrical rise and fall times.

21. (New) The apparatus of claim 19, wherein the sawtooth has asymmetrical rise and fall times.